



2004

# Hunting and Fishing Services for Sportspeople with Disabilities

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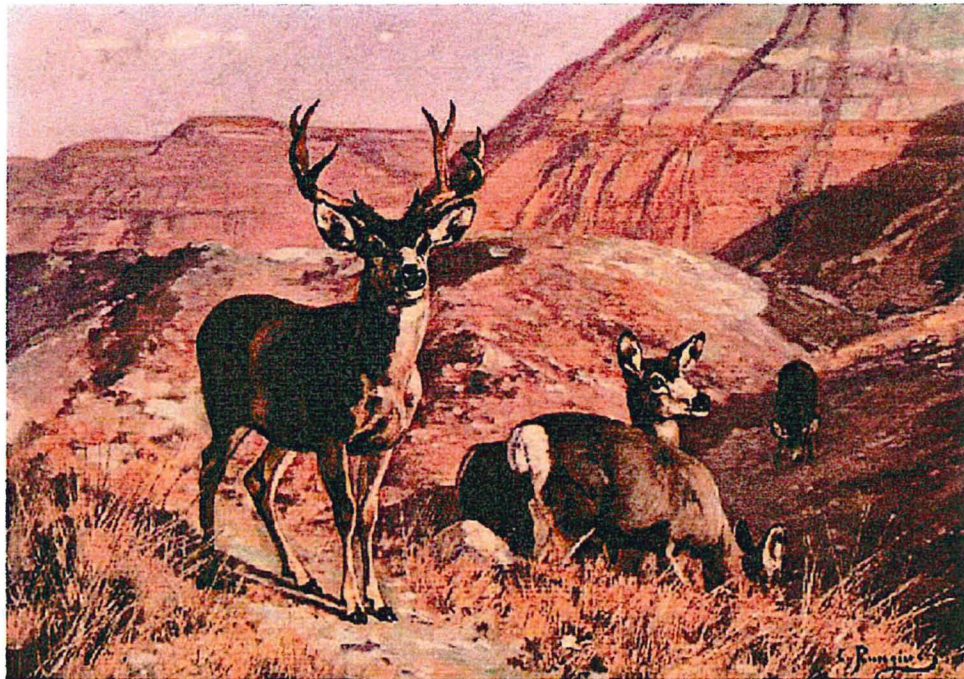
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# HUNTING AND FISHING SERVICES FOR SPORTSPEOPLE WITH DISABILITIES

Benjamin R. Hill, MOTS



HUNTING AND FISHING SERVICES FOR  
SPORTSPEOPLE WITH DISABILITIES

by

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A Scholarly Project

Submitted to the Occupational Therapy Department Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Occupational Therapy

Grand Forks, North Dakota

May 2004

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# **Chapter 1: Introduction**

According to occupational therapists, meaningful leisure participation is an essential part of a healthy lifestyle, and serves as a critical element in providing balance to our lives, both physically and psychologically. One area of leisure, found to be an important part of American culture, is the sporting activities of hunting and fishing. Though there are many hunters and anglers (sportspeople) who benefit from these activities, it is estimated that there are millions of people who are not able to participate in hunting and fishing due to disability.

Why is it that many individuals with disabilities are unable to participate in these activities? While many people like to point out the physical reasons of why this population is not able to participate in hunting and fishing, it has been identified through literature that the largest barrier for sportspeople with disabilities is primarily due to social barriers, such as a lack of public interest, or discrimination. As a result of these social barriers, sportspeople with disabilities do not have access to programs and organizations which provide individual assistance needed for overcoming physical barriers that limit accessibility, and the availability of adaptive equipment.

The purpose of this scholarly project is: to identify the gaps in services that are available to sportspeople who have disabilities, to demonstrate how useful occupational therapy services would be to this population, and to present an idea of how occupational therapists could distribute unique one-on-one services in this area.

## **Chapter 2: Review of Literature**

### **Introduction**

Hunting and fishing are known to be two of America's favorite traditional outdoor recreational activities. Every year millions of people make preparations and go on outings to various outdoor locations where they can enjoy the benefits of these sporting activities. Hunting and fishing benefits our country in many ways. These activities are good for the economy, by creating millions of jobs in sporting goods sales, state fish and wildlife departments, and guided hunting and fishing trip businesses. Hunting and fishing is also good for wildlife and wildlife habitat conservation. According to the National Wildlife Federation, hunters and anglers provide over one billion dollars annually for state wildlife conservation programs (National Wildlife Federation). This makes up seventy-five percent of all state wildlife conservation funding (Sierra Club). Most importantly, are the intrinsic benefits that individuals receive from participating in hunting and fishing activities. Though there are few scholarly journals studying the intrinsic benefits that come from participation in these activities, there are countless personal accounts of how meaningful and important these leisure activities are to people in America.

The opportunities that American's have to participate in hunting and fishing are unique and unmatched by almost any other country in the world and therefore have become a part of our heritage and culture. But what about opportunities for American hunters and fishers who have disabilities? For people who have disabilities, there are

several barriers (both environmental and man made) that must be overcome on a daily basis, but with someone who is trying to participate in outdoor sporting activities, these barriers seem to multiply. This review of literature will attempt to identify why participation in these activities is so important for these individuals, identify the gaps in services that are available to hunters and fishers with disabilities, and describe how occupational therapy services may provide a beneficial alternative for this population, in creating opportunities for participation.

## **Population of Sportspeople with Disabilities**

The National Survey of Fishing, Hunting and Wildlife associated Recreation is an extended service of the Census Bureau that is conducted every five to six years in order to determine the future needs of the U.S. fish & Wildlife Services. In 2001 the total number of sportspersons United States, was approximately 37.8 million. Of this number, 2.08 million or 5.5% were sportspeople who had disabilities (U.S. Fish & Wildlife Services, 2002, p 67). From the 2.08 million sportspeople with disabilities, 81% had mobility impairment, 10% had hearing impairment, 7% had visual impairment, and 11% had mental impairment.

Of the total amount of anglers who did not fish as much as they would have liked to in 2001, 7.1% said that it was due to personal health or disability. When the same question was asked of the hunters, 7.4% said that it was again due to personal health and disabilities. In both cases personal health or disability was the third largest reason why people did not participate in hunting and fishing more during 2001 (U.S. Fish & Wildlife Services, 2002, p 85).

In 2002, the Utah Division of Wildlife Resources, identified that only 1.3% of their population with disabilities were participating in fishing and hunting activities. They reported that 3,299 people with disabilities acquired a fishing license and that only 558 acquired hunting permits. Based on this information, a committee was developed called Activities Designed for All (Brudnick, et al, 2003). This committee was charged by the Utah Division of Wildlife Resources to answer the following questions: a) why anglers and hunters with disabilities are not using the current programs and facilities? and b) how much interest is there (by people with disabilities) in new programs and facilities designed for participation by this population (Brudnick, et al, 2003, p iv)?

The first question will be discussed later in the next section of this review, but for current purposes, the focus will begin at the interest in participation for people with disabilities. To find the answer to this question, the researchers of, Activities Designed for All, conducted a state wide survey targeted toward all organizations for people with disabilities in Utah. There were three versions of the survey that were distributed in order to attain an adequate sample size. These versions were: a phone survey, an e-mail survey, and a home addressed letter survey (Brudnick, et al, 2003, p 18). Within a month, the Activities Designed for All committee received 180 responses. The results indicate that 92% the respondents with disabilities had never hunted before and 13% of this group had never been fishing (Brudnick, et al, 2003, p 21). In contrast, there were 48% to 58% of this same group who said that they would definitely or might participate in hunting, if programs were made more available. There were 94% of the respondents who said they would definitely participate in fishing more often (Brudnick, et al, 2003, p

23). The Activities Designed for All committee concluded that with over 300,000 people who have disabilities in the state of Utah, there would be enormous participation if accessible sporting programs would be developed.

## **Anticipated Benefits**

The Activities Designed for All survey results it is identified that there is a desire for people who have disabilities to participate more in the leisure activities of hunting and fishing. So why would participation in these types of activities be so important for these people? Colin Godfrey, a nurse, presented one possible answer (Leifer, 2002). Colin Godfrey started using outdoor participation and physical activity as a means of helping his clients with mental disabilities to become more active. Godfrey said, "my program started as an informal jogging group, and eventually grew into an activities group that involved other types of exercise, playing many sports, going on mountain bike rides, and taking an annual coast to coast walks across the country"(Leifer, 2002, p). Godfrey indicates the results were, "Patients who take part experience improvements in their attitudes and ability to cope with everyday life" (Leifer, 2002, p 13). Colin Godfrey is currently being funded by the Oxford Brookes University in the United Kingdom, to do further research on the effects of his work (Leifer, 2002).

In a qualitative study, by Taylor and McGruder (1995), the meaning of sea kayaking for persons with spinal cord injuries was focused upon. In preparation for their study, Taylor, et al (1995) identified research which supports the belief that there are both physical and psychological benefits for people with disabilities who participate in sporting activities. The physical benefits that athletes with disabilities acquire are:

increased strength, coordination, and endurance (Taylor, et al, 1995). There is also a decrease in secondary problems such as infection, skin breakdown, and weight gain (Taylor, et al, 1995). The psychological factors are: a decrease in depression, isolation, and mental inactivity and may also include higher self-esteem, greater life satisfaction, enhanced mood, and a greater locus of control (Taylor, et al, 1995, p 41). The participation in these sporting activities can increase the probability of achieving rehabilitation goals, such as facilitating social interaction and providing rewards of everyday living.

In the Taylor, et al (1995) study, three people of various backgrounds, with spinal cord injuries three years post, were interviewed following a first time sea kayaking experience. Among the three different interviews there were several common themes that were found. All three subjects described the atmosphere of the outdoor sea kayaking experience, as bringing feelings of being on a "high" or of being "totally relaxed"(Taylor, et al, 1995, p 42). The individuals expressed how the activity helped them to "diffuse the stress of adjusting to drastic life changes"(Taylor, et al, 1995, p 42). All three individuals described feelings of accomplishment and being able to do something that they didn't know they could. They felt a desire to be healthier and gain physical skills in order to be better at this activity. And finally there was a common desire among the subjects to find more support in pursuing kayaking and other outdoor activities. One subject expressed, "The more there is out there for people in my situation to do, the better off we are"(Taylor, et al, 1995, p 43).

Though the Taylor, et al (1995) study did not specify the individual benefits of



hunting and fishing, it is to be believed that people who have disabilities are receiving some of the same physical and psychological benefits. Hunting and Fishing activities have certain qualities that cannot be found in any other activity. For anyone who hunts there is a definite physical element which produces exercise at a number of different levels, from walking down a dirt road, to climbing up steep mountainsides, or trudging through knee deep mud in the marshes. Some fishing locations require several miles of hiking in the back country. The outdoor environments of hunting and fishing, can provide the experience of a vast amount of sensations that are different and not available in every day environments. Such sensations may include: visually scanning the sky for a particular species of duck, listening for the snap of a twig under the hoof of a deer, feeling the slight tug on the line of a fishing pole, or smelling the musk of a heard of elk deep in the woods. Some sportspeople will even tell claim that their food tastes better in the outdoors. The psychological benefits of hunting and fishing are also noticeable such as experiencing a certain amount of endorphin and adrenalin in pursuit of game and fish. They may gain a greater locus of control and feeling of accomplishment through adapting to the natural environment. They may gain a feeling of being able to provide for themselves in the basic sense of acquiring food. People who participate in hunting and fishing may develop social relationships and improve communication skills between family members and friends. If anyone who participates in these activities can receive these benefits, how much more would these activities benefit someone who has a disability? And if they are beneficial to people with disabilities what kind of services are readily available to this population.

## Services Available to Sportspeople with Disabilities

According to the Americans with Disabilities Act, under Title II, Federal law requires that "State and local governments give people with disabilities an equal opportunity to benefit from all of their programs, services, and activities including public education, employment, transportation, *recreation*, health care, social services, courts, voting and town meetings" (U.S. Department of Justice, 2002). This law was designed to allow people with disabilities to be more active participants in the activities of daily life and to take away barriers that limit people from functioning in mainstream society.

With modern technology and architecture, there have been many wonderful advancements in taking away physical barriers for people with disabilities but when someone with a disability wishes to participate in outdoor activities there is a conflict between trying to preserve the natural habitat and the need for architectural intervention to reduce barriers. This has been an enormous challenge for different State game and fish agencies. As a part of the American with Disabilities Act, all states have made changes in their hunting and fishing regulations which provide sportspeople with disabilities to make special accommodations at their own expense such as the ability to use a crossbow instead of a difficult compound bow, and ability to drive an all terrain vehicle into restricted areas. In many cases these accommodations are not feasible and do not meet all the special needs of sportspeople with disabilities, therefore further services are needed.

Several States have become aware of this need and have risen to the challenge of making the outdoors more accessible. Illinois is one State that is looking to further meet

the needs of sportspeople with disabilities. By collaborating with private organizations that represent persons with disabilities, they hope to find ways to improve recreational opportunities, through identifying barriers that limit participation, and educating both state employees and the general public regarding the needs of the given population (Illinois Department of Natural Resources (IDNR)). Illinois has set apart a number of designated sights that allow hunters with disabilities the opportunity to hunt deer, pheasants, waterfowl, and dove. Their hope is to develop opportunities, such as these, for individuals all over the state (IDNR).

Alabama is another state that has pioneered programs to benefit hunters and fishers with disabilities. The state has sponsored hunting and fishing areas through the collaboration of the Department of Game and Fish, the State Parks and Land Divisions, and the State Education Department; set apart specifically for persons with disabilities (Alabama Division of Wildlife and Freshwater Fisheries (ADWFF). *Alabama's hunting & fishing trail for people with physical disabilities.*) The state provides environmental adaptations and adaptive hunting equipment at each hunting area with no additional cost to the consumer. The individuals that access these areas must be medically certified as having a disability and registered by the Game and Fish Department (ADWFF, *Enabling Disabled Hunters.*)

While these and many more states are working hard to meet the needs of sportspeople with disabilities, there are still a few states remaining that are falling short of demand. Idaho is one state that is believed to be the least accommodating for sportspeople with disabilities. Locating information on state hunting and fishing

programs in Idaho, for people with disabilities was extremely difficult and none were found except for the mention of a few accessible fishing locations. After an extensive search only a limited amount of information was found regarding accommodations for hunting and fishing with disabilities. Only in the Idaho fishing proclamation could there be found any information regarding hunting with disabilities. It mentioned the ability to purchase a special crossbow permit to be used only during archery season for persons with disabilities (Idaho Fish and Game). Another mention of accommodations for sportspeople with disabilities in Idaho was located in the Idaho Disability Statutes. Under the topic of Recreation, Title 36 Fish and Game, Chapter 11 discusses the ability to obtain a special permit in Idaho which allows a "physically handicapped person" the ability to hunt from a motorized vehicle (Idaho Disability Statutes). It is believed that the lack of up to date terminology describing the population of sportspeople with disabilities, shows that Idaho's services are out of date and inadequate to meet the standards of the Americans with Disabilities Act.

In the Activities Designed for All study, Utah has recognized the need and is ready to make changes to address the lack of services. The first question posed, by the Utah Division of Wild Life Resources (UDWR) was; a) why anglers and hunters with disabilities are not using the current programs and facilities (Brudnick, et al, 2003, p iv)? To answer this question, the Activities Designed for All Committee asked their participants to mark their top five reasons from a list of why they are not participating in the existing programs that are available from the UDWR. The number one reason for not participating in hunting and fishing was that there was a lack of available knowledge

about existing programs in Utah. This accounted for 39% of the number one reasons. The second rated number one reason at 12%, was that the existing facilities are inaccessible for their disability. The third rated number one reason at 12%, was that people felt there needed to be more programs exclusively for people with disabilities. The fourth ranked number one reason at 10%, is that there is a lack of personal assistance that would be needed for participation. The fifth ranked number one reason at 5% was that there was a lack of information about available adaptive hunting and fishing equipment (Brudnick, et al, 2003, p 24).

In looking at possible solutions for results of low participation, the Activities Designed for All committee asked the UDWR to determine whether they had a high, medium, or low ability to provide solutions in the top five areas. The UDWR replied that, "they had a high ability to educate people with disabilities about available programs and possibly develop more accessible facilities, but that they had a low ability to provide individual assistance to people who had difficulty finding a hunting or fishing companion" (Brudnick, et al, 2003, p 34).

## **Gaps in Services for Sportspeople with Disabilities**

While many state wildlife programs are working hard to meet the needs of sportspeople with disabilities, there are still a few gaps in the services that they provide. These gaps include the ability to provide everyone with needed adaptive equipment, or the ability to provide needed one on one assistance during these activities. To fill these gaps, several organizations have been created to further meet the needs of sportspeople with disabilities. The largest of these organizations in the U.S. is the Buckmasters

American Deer Foundation (BADF). They originated in Alabama and currently have chapters in 23 Eastern and Midwest states. Buckmasters believes that there are literally millions of people with disabilities who would participate in hunting and fishing sports if they had education and opportunities (BADF). There are many services that this organization provides such as a program called Life Hunts. Life Hunts program fulfills the wishes of the critically ill and extremely disabled children by covering all the expenses of a hunt. Many hunts for the disabled are conducted on private property with no charge to the hunter. Through Buckmasters, 90 hunts took place last year, involving 495 hunters with disabilities. Hunt scholarships are available for qualified individuals which pay for all hunting expenses. Buckmasters, in conjunction with Horton Manufacturing, distributes crossbows to eligible people who have disabilities. Hunters with disabilities can apply for grants through Buckmasters, that aid in the purchase of modified gun mounts and other hunting equipment. They also have access to a Solutions Video, which is a collaboration of ideas from other hunters with disabilities in regards to adaptive hunting equipment and use (BADF). There are several other organizations like Buckmasters in several areas of the country which have the ability to fill in the gaps of services that state programs have not been able to fill. The problem here is that not every state is fortunate to have one of these organizations and even when a state does have one, it is rare that they can provide the same opportunities and services that the BDAF has the ability to do. Once again Utah and Idaho are an example of two areas where there was no such organizations for sportspeople with disabilities found.

Without supportive hunting and fishing organizations and inadequate



accommodations for people with disabilities the opportunities for participation in these activities appear sparse. However, there is another way that sportspeople with disabilities can receive services for hunting and fishing activities. In almost every area in the U.S. that is ideal for sporting activities, there are small businesses which provide guided hunting and fishing trips. These businesses are ran by experienced outdoors men who know the area and are skilled at providing successful experiences for their clients. It has been found that there are a select number of these guided hunting and fishing businesses which offer services to people with disabilities. Most of their information can be found on web sites or brochures or through a telephone call.

In Utah, Shawn Labrums Wild Mountain Outfitters is referred by the BADF for being a business which has provided hunting experiences for people with physical disabilities. With this outfitter participants may have opportunities to hunt in the Uinta mountain range for Mountain Lion, Mule Deer, Elk, Big Horn Sheep, Antelope, and Black Bear (Shawn Labrums Wild Mountain Outfitters). Even though this business has served people with disabilities, there is no mention on the web site of what particular accommodations are made.

Another hunting and fishing guide business that provides services to sportspeople with disabilities is the Deltana Outfitters in Alaska. The web site advertising for this company goes into more detail about services that are provided for people with disabilities. This site mentions that they invite people with hearing, visual, and mobility impairments to call about opportunities that they provide. People who have disabilities and use the Deltana Outfitters may experience caribou hunting, moose hunting, brown

bear hunting and some of the best fishing that Alaska has to offer (Alaska Hunting Adventures with Deltana Outfitters). This business shows a genuine interest in meeting the need of sportspeople with disabilities, but again there is nothing mentioned of the specific accommodations which are made.

One website that did mention specific accommodations for sportspeople with disabilities was the East Cape Plains Game Safaris in Africa. This outfitter describes in detail how they provide services for all hunters who have disabilities. For example a hunter who has paraplegia is carried by four employees in a modified chair with extended handle bars, to a desired hunting location (East Cape Plains Game Safaris). This allows hunters with walking limitations to hunt virtually anywhere that is accessible on foot. East Cape Plains Game Safaris also offers the use of modified shooting tripods and other adaptive equipment. To help prepare sportspeople with disabilities for their hunting experience, East Cape Plains Game Safaris requires their hunters to do a one-shot-test with their rifle at 100 meters to make sure they can display safely the ability to shoot and hit a target of appropriate size before their adventure. Another accommodation that is made is the opportunity to interact with some semi-tame hand reared game animals on the ranch. This opportunity helps hunters to better identify the animals they are hunting (East Cape Plains Game Safaris).

Of the approximately 50 hunting and fishing business that were researched for this literature review, less than half mentioned that they provided services for sportspeople with disabilities. Of the few that do provide these services there was only one that described the specific accommodations that could be made. In researching many

of the guided hunting and fishing businesses there were no cases that described any professional experience in working with people with disabilities. Due to the often unpredictable environment of their profession many of these hunting and fishing guides are resourceful, but as a whole they lack the professional background, knowledge, and skills of working with specific disabilities; in order to make participation in these activities the most effective, efficient, and safe.

## **Occupational Therapy Services**

There are many barriers that must be overcome by sportspeople with disabilities and they come in many forms that effect each individual differently. Aside from the societal barriers that limit the hunting and fishing experience, limited mobility in the outdoors environment, and difficulty using mainstream hunting and fishing equipment are among two of the most defeating barriers that keep people with disabilities from participating. Occupational therapy is one profession that may prove to be a useful resource for people with disabilities who are interested in pursuing the sports of hunting and fishing.

In the book, *Occupational Therapy for Physical Dysfunction 5<sup>th</sup> ed.* Catherine A. Trombly, and Mary Vining Radomski (2002), "provide occupational therapists principles to improve patients's competence in mobility" (p 666). A few of these principles include: "individualizing training and adaptations to the patient's deficits, ensuring that the training is ecologically valid, and following a hierarchy of skills" (p 666). According to Trombly and Radomski, (2002) "ecological validity means that the training takes into consideration the actual environment that the patient will be interacting with" (p 667).

Including the outdoor environment. Mobility to occupational therapists doesn't simply mean the ability to propel a wheel chair from point A to point B, but it takes into account all the moving a person does in an environment (Trombly, et al, 2002, p 669). Mobility includes making transfers from a truck to a wheelchair, moving to the location and then transferring to a canoe, boat, or tree stand. Occupational therapists are skillful at teaching and providing transfers in a safe and efficient manner. In addition to transfers and mobility, proper body positioning is another skill that is taught by occupational therapists. Trombly and Radomski (2002) explain that the way a person is positioned has a significant effect on the abilities of the individual to perform functional activities. Occupational therapist would have the training to identify the most effective position and posture an individual needs, to shoot a gun or use a fishing pole effectively. They could also make adaptations to ensure proper positioning depending on whether the person is in a canoe, wheelchair, or on another platform.

Occupational therapists also have skills in the field of assistive technology which is any kind of adaptive equipment, or devices that can facilitate the functional independence of an individual with disabilities. A positional statement about assistive technology and occupational therapy, by the Canadian Association of Occupational Therapists (CAOT) explains the competence occupational therapists have to use assistive technology in practice (Canadian Association of Occupational Therapists 2003). The CAOT states that "occupational therapists have expertise in assessing clients for assistive technology and outlining recommendations of devices/modifications that meet the needs of the client within their environment" (2003, p 114). Occupational Therapists are also

skilled at providing training, support, and fine-tuning of assistive technology to ensure fit between the person, technology and their occupations. As an assistant in the hunting or fishing environment, occupational therapists would have the ability to match proper adaptive hunting equipment to a sportsperson with disabilities. Not only could they identify what adaptive hunting and fishing equipment, but according to the Canadian Association of Occupational Therapists (2003), "in some cases they are experts in the fabrication of assistive devices" (p 114).

Aside from being able to provide more opportunities through mobility and assistive technology, occupational therapists have the ability to do a job or task analysis for a specific activity. According to an article written by Rosemary Lysaght (1996), "Occupational therapists use job analysis as a basis for evaluating injured workers, planning rehabilitative programs, structuring preemployment screening protocols, developing transitional work plans and conducting environmental modification and risk management programs" (p 569). It is believed that with some adjustments to a job analysis program, occupational therapists could design a way to analyze a specific hunting or fishing activity. This would be done to understand what physical and functional abilities would be required for a specific hunting or fishing experience and would be a detailed way of determining an individual's ability to participate. It would also give sportspeople with disabilities, an idea of what accommodations will be needed before the outing begins.

Occupational therapists have much to offer in this area, and their services may be beneficial in many ways. Occupational therapists would be a useful asset as a committee

member in organizations or state accessibility programs. They could also provide one-on-one services, or work as a consultant with a guided hunting or fishing business.

## **Conclusion**

There are currently millions of hunters and fishers who have disabilities. Although opportunities are available, there are still gaps in the services that are provided for sportspeople with disabilities. In many areas of the U.S., sportspeople with disabilities do not have access to the services provided by private organizations and state programs. It is believed that occupational therapy has the knowledge and skills to narrow these gaps and provide a unique service to the potentially thousands of sportspeople who have disabilities and live in Utah or other places. These services could include assisting sportspeople with disabilities to: increase outdoor mobility, identify appropriate adaptive equipment, and determine the physical demands of a specific hunting or fishing activity. Since there are no identified occupational therapists working in this area, providing such services, may entail starting a new business. Pursuing an interest in this new business area would require an occupational therapist to develop a business plan and a protocol for delivering these services to individuals.

The information gathered in this review of literature has lead to the conceptualization of a business plan that will provide a consultation, equipment rental, and training service to sportspeople with disabilities. In conjunction with the business plan a training protocol will be developed that addresses the specific needs of the sportspeople with different disabilities that were identified by the National Survey of Fishing, Hunting and Wildlife Associated Recreation.



## **Chapter 3: Activities/Methodology**

Developing the product for this scholarly project, was an extensive and well thought out process that involved: 1) an in-depth review of literature, 2) making two personal visits to a local disability organization who was making preparations to sponsor a local disability hunt, 3) making telephone calls to 3 prominent Utah guided hunting and fishing businesses, and finally, 4) relying on occupational therapy education and personal experience to make judgements on items of importance to this topic.

Through the review of literature, major gaps in the services provided for sportspeople with disabilities was narrowed down to the state of Utah, where no hunting and fishing organizations were found supporting people with disabilities, and poorly managed state run programs were not effectively promoted. Utah was chosen as a target area not because of the lack of services, but because of their recent awareness to the lack of services leading to extensive research in this area.

After identifying gaps in services it was necessary to look at how needed services could be widely distributed on an individual basis. The Buckmasters American Deer Foundation had one area of their website showing a listing of guided hunting and fishing businesses that provide individual services to sportspeople with disabilities. In Utah three were listed but after several phone calls, only Shawn Labrum's Wild Mountain Outfitters proved to be a business genuinely interested in providing quality services for sports people with disabilities. Another vehicle for the distribution of services to individuals with disabilities was the many local disability organizations that may be interested in sponsoring a hunting or fishing trip for the people they serve.

With the identification of Utah as a place in need of hunting and fishing services and the use of guided outfitters and local disability organizations as an effective way to distribute services to this population, it was decided that a business plan and a protocol for consultation and training services would be developed as the product for this scholarly project.

A business plan was developed from guidelines provided in the OT 507 Innovative Management class by instructor LaVonne Fox. This process involved researching the internet and other sources to identify the existing market, financial requirements, and strategies to implement a consultation, equipment rental and training service that teaches people how to assist individuals with disabilities who are participating in hunting and fishing activities.

To develop a training protocol, it was first necessary to identify actual needs that sportspeople with disabilities have. The National Survey of Fishing, Hunting and Wildlife associated Recreation identified that the vast majority, 81% of sportspeople with disabilities were effected by mobility impairments (U.S. Fish & Wildlife Services, 2002, p 67). Others were visual, hearing, and mental or cognitive impairments. The top number one needs identified by the Activities Designed for All committee (Brudnick, et al, 2003), included, information and education, greater accessibility to outdoors environments, individual one-on one assistance, and access to adaptive hunting and fishing equipment. By identifying these needs, it became evident that an occupational therapy approach using assessments, teaching techniques for increasing mobility, and identifying assistive technology options would be the most effective elements for a

training protocol.

One assessment that was found is the Universal Trail Assessment Process that is an existing assessment used by National and State parks, to identify the accessibility of trails and outdoor recreation areas (Beneficial Designs). It is believed that this would be an effective tool for someone with a disability who needs to identify the mobility requirements of a specific area in order to make appropriate preparations and adaptations.

The development of the individual assessment was influenced by the Occupational Therapy Practice Framework, and the Human Activity Assistive Technology (HAAT) approach discussed in *Assistive Technologies Principles and Practice 2 ed.* (Cook, Hussy, 2002). This assessment gathers information regarding the individuals past experience, motivations, goals, and physical strengths and limitations that may effect their ability to participate in the desired activity. By matching these two assessments together it is estimated that individual needs can be identified and decisions on adaptations could be effectively made for participation in hunting and fishing activities.

Information on transfers, traveling and body positioning came primarily from personal experience in occupational therapy fieldwork and the text of, *Occupational Therapy for Physical Dysfunction 5<sup>th</sup> ed.* by Trombly, and Radomski (2002). This information was also influenced through talking to sportspeople with disabilities at Options for independence, a non-profit organization located in East Grand Forks Minnesota. People there were preparing for an annual disability hunt and had valuable information about how people with disabilities perform difficult transfers from trucks to

wheelchairs and from wheelchairs to adapted tree hunting stands. They were also able to provide useful information on how to safely and effectively move through the outdoor environment.

Finally Adaptive Hunting and Fishing equipment was researched through the internet and through Options for independence to understand the concept and the need for adaptive equipment. This information was used to give the reader an idea of the equipment that is available and to show what populations can benefit from it's use.

It is believed that through the review of literature and other sources, that the following business plan and protocol would be a sufficient beginning for someone with an occupational therapy background who is preparing to provide any type of individual hunting and fishing service to people with disabilities.

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## **Chapter 4: Product**

### **Mountains to Marshes Accessibility Services**

110 State St. #14

Grand Forks, ND 58203

(701) 746-1045

### **Business Plan**

# **Mountains To Marshes Accessibility Services**

**We make it a possibility, You Make it a Reality!**

Owner and Operator

Benjamin Hill, MOTS

110 State St. #14

Grand Forks, ND 58203

(701) 746-1045

To: Loan Bank  
123 S. 543 E.  
SLC Utah, 87654

Dear Bank Loan Officer,

According to a recent survey by the Activities Designed for All Committee, 48% to 58% of people with disabilities in Utah said that they would definitely or might participate in *hunting* if programs were made more available, and 94% said they would definitely participate in *fishing* more often if programs were made more available (Brudnick, et al, 2003, p 23). Due to the high interest level and deprivation of services in Utah, a new company has been developed which will provide a unique consultation, equipment rental, and training service, for persons with disabilities who are interested in Utah's outdoor traditions of hunting and fishing.

Mountains to Marshes Accessibility Services is a company that is staffed by an occupational therapist who has a love for the outdoors and who is specialized in training people with all types of disabilities to learn new skills, overcome barriers, and adapt to the environment of their desired activity. This company will not only provide services to individuals directly, but will prepare organizations and guided hunting and fishing business to meet the needs of this population as well.

In order to bring this long awaited service to the 300,000 Utahns with disabilities, a financial loan has been found necessary to continue the preparations and start this business. This summary is a request for further examination of Mountains to Marshes Accessibility Services, in hopes that it will meet your requirements and approval for financial assistance. Thank you.

Benjamin Hill, President

110 State St. #14  
Grand Forks, ND 58203  
(701) 746-1045



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## **Business Idea and Description**

### **A. Description of Business:**

Mountains to Marshes Accessibility Services (MMAS) is a consultation and training company designed to give those with a disability, a greater opportunity to participate in the great American traditions of hunting and fishing. This company is staffed by an occupational therapist who has a love for the outdoors and who is specialized in training people with all types of disabilities to learn new skills, overcome barriers, and adapt to the environment of their desired activity. MMAS provides a unique consultation and training service to both; individuals with disabilities, and to guided hunting and fishing businesses who are trying to meet the specific needs of their consumers. It also offers the rental of cutting edge adaptive hunting and fishing equipment with suggestions and training on proper use. Physical impairments that are addressed include: paraplegia, quadriplegia, hemiplegia, visual difficulties, hearing impairment, endurance issues, coordination issues, and cognitive disabilities.

### **B. Product and service:**

The services that will be provided by this business can be grouped into two areas:

1) Consultation services will include: a) An individual needs assessment, which will look at the client's interests, abilities, and goals for the chosen activity. This assessment will identify the individual's specific needs regarding adaptive equipment, level of desired assistance, and any safety precautions to be considered. b) An environmental assessment, which will measure the accessibility of a specific location in order to identify physical demands of the desired hunting or fishing trip that they would like to go on.

2) Training services will include a hunting or fishing ergonomics program that teaches guides or individuals: a) body positioning and mobility in the hunting and fishing environment, b) proper use of adaptive equipment, and c) transfers from wheelchairs to boats, canoes, tree-stands, trucks, ATVs, and any other platform.

### **C. Marketing:**

The market in which MMAS will compete is among the many small and several large businesses that provide guided hunting and fishing tours to people with disabilities in the state of Utah, and to individual sportspeople with disabilities who have need for individual one-on-one assistance. Through research there are many good organizations which provide uncontested services for hunters and fishers with disabilities on an individual basis, but none have been identified as of yet in Utah. There are however a few guided hunting and fishing businesses in Utah who provide accommodations for sportspeople with special needs.

### **D. Competition:**

As far as it is known, there are no other businesses that are providing the exact same services as MMAS, but there are a number of factors that provide competition. The biggest competition for MMAS will be the Utah Division of Wildlife Resources (UDWR) or any unknown non profit organizations that provide services and information at little to no cost for individuals with disabilities. These organizations have an ability to serve greater numbers than MMAS, with supportive funding. The weakness for the UDWR is that they do not have the ability to serve sportspeople with disabilities on an individual basis.

Other competitors are the guided hunting and fishing businesses who already provide disability services. These companies do have some experience providing types of services. They are also expert in their knowledge of the outdoors environment and know what is the most effective equipment for mainstream hunting and fishing. Their major weakness is that there is little to no formal education or background on providing special services to people with disabilities. Another weakness is that it is only about 8 of these businesses in Utah who openly claim to provide services to people with disabilities.

#### **E. Personnel:**

The president and currently the only employee of this company is Ben Hill. As a youth he spent many days in the Utah outdoors in pursuit of elk, deer, ducks, doves, and lots of fish. Since the age of 16, Ben has been actively involved with people who have disabilities. He has been a peer tutor, a coach in the Special Olympics, a Boy Scout leader of scouts with special needs, and a volunteer in many other aspects for people with disabilities.

His interest brought him to North Dakota where he has pursued a masters degree in occupational therapy. This degree in occupational therapy has given Ben skills to increase the independence of people with disabilities. As part of his education he and two classmates conducted a statewide survey to understand the need for hunters with disabilities. With this information they developed a proposed hunting with disabilities educational program for the North Dakota Association for the Disabled.

Other personnel may be hired as needed in order to meet the needs of accounting, maintenance, and an additional occupational therapists who has similar interests and

would be able assist with the growth service demands.

## **Marketing Plan**

### **A. Market Analysis:**

1. There are approximately 300,000 people with disabilities in the state of Utah who are not adequately provided the opportunity to participate in hunting and fishing activities. According to a survey funded by the Utah Division of Wildlife resources, 68 to 94% of people with disabilities in Utah have never hunted (Brudnick, et al, 2003, p 21). Of that number 49-58% said that they definitely would or might participate in hunting if they had the needed resources. For fishing 13% said they had never been fishing before, but 94% said they would definitely participate in fishing more often if the resources were available (Brudnick, et al, 2003, p 23). Among the identified needed resources were: information, accessibility, adaptive equipment, and one-on-one assistance. From the information obtained in this survey, the Utah Division of Wildlife Resources has recognized a need, and it is believed that they are preparing to launch a new campaign to create new hunting and fishing opportunities for people with disabilities. From this new campaign it is expected that there will be a dramatic increase in the interest level of these activities over the next few years.

There have been 30 fishing and 32 hunting guide services that were researched for market analysis. Approximately 8 of these businesses mentioned that they could provide assistance for people with disabilities in their website advertisements. Of the businesses that mentioned services for people with disabilities, nothing was said of the specific accommodations that could be made.

2. The strengths of the services provided by MMAS are that it will have a professional background of working specifically with people who have disabilities, in areas of assessing environmental demands, applying adaptive equipment, and assisting with mobility and functional positioning. Because of the nature of the disability services provided, the cost for their services by a business may provide some tax relief. People with disabilities may also find some tax relief in the cost of these activities based on the ability to determine the psychological and physical benefits that may be acquired through this leisure experience. This business also has the ability to make it's competitors into customers.

Weaknesses include, the lack of buying power for adaptive equipment. Lack of experience assisting people with disabilities in the hunting and fishing environment, and a lack of experience running a business.

#### **B. Market Strategies:**

1. Distribution of services will be targeted to the guided hunting and fishing businesses of Utah and to individuals in the area who have disabilities. MMAS will provide services in a number of ways. Individual items of service include:

a) Environmental assessment for a specific hunting or fishing location.	\$400.
b) Individual assessment for an individual with a disability.	\$100.
c) Training Course to teach skills in assisting a sportsperson with a disability during hunting and fishing activities.	\$500.
d) Equipment rental including: adaptive hunting and fishing accessories, outdoor power wheelchairs with adaptive gun or fishing mounts, lightweight outdoor wheelchairs, and four person ATV's.	\$10-100 per day.
e) Professional one-on-one assistance during an outing.	\$50 per hour

All services may be purchased individually but a packaged deal will be offered including: an environmental assessment, individual assessment, training course, and equipment rental up to \$500, for a discounted price of \$1,300, saving the customer \$200 dollars. This package is ideal for guided hunting and fishing businesses because the training and environmental assessment will continue to assist them for additional customers in the future. It will also be good for an individual with a disability and their friend or family member who would like to learn skills for doing these activities more independently.

2. The MMAS service policy is that client's will receive the highest quality professional services that will minimize the effects of physical and environmental barriers caused by their disability. The services provided are guaranteed to be extremely effective, efficient, and individualized. The MMAS goal is to do what is necessary to maximize the benefits of the hunting and fishing experience.

3. MMAS will begin advertizing for their business through the internet. This service can be obtained for \$21.00 a month and with no startup costs due to a family owned internet advertising business. This is a good advertising avenue due to accessibility and it provides a resource where people can go to obtain detailed information on the services that will be provided. Through the internet, MMAS will be able to use links from other businesses and organizations to guide users to their site. Another form of advertising will be through fliers, posters which will be distributed to local organizations for people with disabilities. This could cost anywhere from \$50 to \$100, depending on the amount and price to print fliers and posters. They would also

print business cards that could be handed out for different occasions. Business cards can be obtained for a very reasonable price, as low as 20 dollars for a case. MMAS would use business cards as a form of advertisement because they are inexpensive and easy to give away.

4. Incentives for MMAS services would be to provide a free initial consultation for someone who has a disability and is planning on going hunting or fishing. This would occur for the first few months of business in order to build up clientele, and to increase awareness of Mountains to Marshes Accessibility Services. There is also a chance that if the person liked the information they were receiving, they might hire MMAS to go on the outing with them to provide training and one-on-one assistance.

For the guided hunting and fishing outfitters, MMAS would provide a free individual and environmental assessment for one of their clients with a disability. This would provide MMAS with the opportunity to demonstrate the value of its services, in order to strengthen networking, and to build a strong referral/client base.

MMAS is also negotiating a compensation deal with manufacturers of the more expensive adaptive equipment. It is proposed that if they donate free equipment to the MMAS business, MMAS would offer discounts on guided hunts or fishing trips to the purchasing customers of the adaptive equipment businesses. MMAS would also use the equipment as an indirect method of advertisement for these companies.

5. Direct sales will be a major part of this business. MMAS would do this through making personal visits to guided hunting and fishing business owners. MMAS would also make visits to local organizations for people with disabilities in order to distribute



flyers and talk to people one-on-one. This is important because this type of service is most likely not familiar to customers and it would give MMAS an opportunity to explain what their business does in order to convince people of its usefulness. It would also give MMAS a chance to get a feel for the interest level among their consumers and gain a more accurate understanding of what their actual needs are.

6. Public relations will be important for MMAS because it helps to advertise services and gain customers and community trust. As a way to do public relations MMAS would look into volunteering time for the developing projects for sportspeople with disabilities of the Utah Division of Wildlife Resources. Depending on the cost effectiveness, MMAS may also provide a free fishing trip to someone from several of the local disability organizations as an award.

## **Financial Position and Forecast**

### **A. Expenses:**

#### **Estimated start up expenses:**

<b>Item</b>	<b>Amount</b>
Advertising	\$1,000
Adaptive equipment	\$10,000
Insurance	\$2,000
Licenses and permits	\$200
Miscellaneous	\$500
Accounting	\$1,000
Signs	\$200
Supplies, office, cleaning, and outdoor	\$800
Unanticipated expenses	\$1,000

Van, used with a lift and a trailer	\$8,000
Cell phone	\$150
<b>Total Expenses</b>	<b>\$24,850</b>

**Estimated monthly expenses:**

<b>Item</b>	<b>Amount</b>
Advertising	\$21.00
Automobile-Upkeep/Ins.	\$250.00
Bus./Liability Insurance	\$50.00
Office Supplies	\$20.00
Repairs/Maintenance	\$100.00
Outdoor Supplies	\$100.00
Utilities/Phone	\$40.00
Salary	\$3,000.00
State Taxes (6.75%)	\$155.00
Payroll Taxes (15%)	\$150.00
<b>Total Expenses</b>	<b>\$3,886.00</b>

**Estimated monthly profit/loss:**

Estimated Income	\$4,250.00
Total Expenses	\$3,886.00
<b>Total Profit/Loss</b>	<b>\$364.00</b>

**Estimated first year profit/loss:**

Estimated Income	\$51,000
Total Expenses	\$46,632
<b>Total Profit/Loss</b>	<b>\$4,638 or 8.5% increase</b>

## **B. Current funds available and Current funding needs:**

It is anticipated that the president of the Mountains to Marshes Accessibility Services will come into this business with \$8,000 dollars. This will be personal savings from previous employment.

Current funding needs will estimate \$16,850 dollars after the \$8,000 dollars personal contribution. This should make acquiring a bank loan or other contributions easier to obtain and pay back. It is anticipated with the expected amount of monthly income, that all loans will be paid off within, 4 to 6 years.

## **C. Sources of finance:**

Due to the relatively small amount of money that is needed for starting this business MMAS will inquire for a bank loan, to meet the remaining start up costs. It is anticipated that in order to receive this loan a business plan will need to be presented with information on past banking and tax history. MMAS will also seek for alternative ways to receive financial assistance. It will go to the Utah division of Wildlife Resources to see if there are funds available for a business which will be providing opportunities solely to hunters and anglers with disabilities. This is expected to be a high possibility due to the current need and interest in Utah. A small loan may also be acquired by some of the disability organizations, in return for hunting and fishing workshop for that organization.

## **Anticipated Challenges and Planned Responses**

Presently there is a small number of people with disabilities who go hunting or fishing in Utah. Based upon research there is a high interest level in these activities, but

there may be some other unknown factors for a lack of participation (Brudnick, et al, 2003, p 23). Because of this it will take a large investment of time to educate the guided hunting and fishing businesses of the benefits of this business. This challenge will require careful placement of advertising and effective negotiation in order to create interest and obtain customers. Budgeting is another anticipated challenge. With low funding for starting this business and an estimated low monthly income it will take good judgement on spending money effectively for the benefit of the business. It is believed that services for individual sportspeople with disabilities may be too expensive. This may require the development of less expensive services for the individual such as group training or workshops for disability organizations. Another challenge will be the time it takes to assist with individual hunters and fishermen. Factors for time include: time spent with clients on hunts and fishing trips, travel time to remote locations, and time to do consultations. Time spent on this business will put strain on family relations and may not equal the pay that is received in the first few years of business. To address this challenge, a business partner will be needed, who will be willing to take an equal share of the workload. The future may bring a need to expand the business into different locations in order to provide more opportunities for people with disabilities. This will bring new challenges to the business and a need to improve training and consultations services.

**Hunting and Fishing Service Protocol for  
Sportspeople with Disabilities**

**Mountains To Marshes  
Accessibility Services**

**We make it a possibility, You Make it a Reality!**

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## **Introduction**

This protocol is an instruction manual for anyone who is giving individual assistance to hunters and anglers (sportspeople) with disabilities. The information in the following manual is designed to go along with the training sessions that are provided by a disability consultant for the Mountains to Marshes Accessibility Services business. The following information does not substitute for the hands on experience that will be acquired in the training sessions, but will serve as a quick reference and a study guide when preparing to provide one on one assistance for sportspeople with disabilities. This protocol will provide useful information in the following areas: Populations of Sportspeople with disabilities, Assessments for preparing people with disabilities to go hunting or fishing, Mobility in the hunting and fishing environment, and Adaptive hunting, fishing and mobility equipment.

## **Populations of Sportspeople with Disabilities**

People who have disabilities are just like anyone else. They are normal individuals who have unique challenges in life. When working with someone who has a disability it is important to remember that a person is not their disability. Therefore, it is not appropriate to call someone “disabled”, “handicapped”, or “crippled”, but rather “a person who has a disability.”

When determining services for sportspeople with disabilities, it would be difficult to discuss the specific needs of all disabilities. In order to simplify learning, it is necessary to categorize sportspeople with disabilities into different groups. The four general groups of disabilities identified by the 2001 National Survey of Fishing, Hunting

and Wildlife associated Recreation are: mobility, mental, visual, and auditory impairments (U.S. Fish & Wildlife Services, 2002, p 67). These groups of disabilities will be the focus for this manual in determining the services that will be offered.

### **1. Mobility Impairment:**

Mobility impairments are disabilities that include any difficulty with walking. This may include, not only people bound to wheelchairs, but people who are limited to short walking distances due to easy fatigue, amputation, or any other disease or injury. When looking at the needs for Sportspeople with mobility impairments, it is important to realize that walking is often an additional problem to other difficulties. This may include, not being able to use the arms, hands and other areas of the body, or not being able to sit up without help from a seat belt. An example of this is someone with quadriplegia who is generally paralyzed from the neck or chest down. Because mobility is such a huge factor for sporting activities, it will be addressed in much greater detail later in this instruction manual.

### **2. Mental Impairment:**

Mental impairments can be the result of developmental problems, retardation, or damage to the brain. These impairments can cause a person to have difficulties in memory, judgement, discrimination, problem solving, communication, and presenting emotions. In many cases people with mental disabilities would not be suitable for hunting and fishing activities. This would include anyone with a mental impairment who does not understand safety issues. The disability consultant should always be the one to determine if a person with mental impairment is safe to go hunting or fishing. When

helping someone with mental impairments it is important to understand that learning new information is not easy for these people. Do not to assume that they will understand or remember everything. They may need you to repeat things several times before they understand.

### **3. Visual Impairment:**

Vision is something that is important when fishing and more important in hunting activities. With the use of modern technology and skilled assistance, there are a great number of people with visual impairment who enjoy and are successful at both of these activities. Visual Impairments are determined in a number of ways, and does not only include people who have full blindness. Sportspeople who have visual impairment may need assistance to safely move through the outdoor environment. When guiding a person through the outdoor environment, it is appropriate to allow them to hold onto your arm as you walk. Be descriptive of the surroundings and direction you are going. Point out potential hazards that they cannot see. With these people, senses such as hearing, smelling, and touch, can be sharper than normal. It is a good idea to give them every opportunity to use these other senses during a hunting or fishing experience.

### **4. Auditory Impairment:**

Auditory impairments have to do with difficulty hearing and again does not only include people who have total deafness. Sportspeople with hearing impairments may seem to have the least amount of problems in participating in hunting and fishing activities. However, there are some problems which need to be considered. The primary difficulty with hearing impairments is communication. Many people with hearing



difficulty listen to what you are saying by reading your lips, using sign language, or using hearing aides. When assisting a sportsperson with auditory impairment they may need you to speak up, but more importantly speak clearly. Make sure when speaking that you look directly at them and that they have a clear view of your face. If there is a need for silence, such as when stalking game, it may be useful to establish some basic hand signals that will give basic directions. Sports people with hearing impairment may be extremely sensitive to loud noises such as gunfire. Therefore it may be necessary to bring a form of hearing protection.

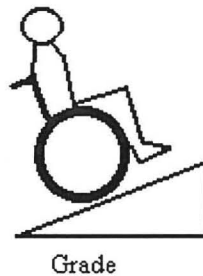
## **Assessments**

### **1. Environmental Assessment:**

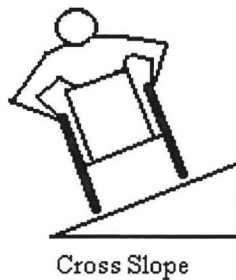
An environmental assessment is important to determine the accessibility of the area where the hunting or fishing activity will occur. Often times while traveling from the vehicle to the desired spot for hunting and fishing, sportspeople don't have a specific trail to follow. For someone who has a disability, a path of travel must be planned in advance, especially if there isn't a wheelchair accessible trail available. The environmental assessment gives a detailed description of the chosen path of travel through the outdoor environment. This information will help people with disabilities and their assistants to accurately prepare for the physical demands of the environment as they go hunting or fishing.

This assessment will be done by the disability consultant using the Universal Trail Assessment Process (UTAP) (Beneficial Designs). The UTAP uses a number of tools to measure five characteristics of a path that have an effect on people with disabilities.

- Grade- is the average slope that a person has to walk up or down on the way to their destination. Walking or pushing a wheelchair up or down a slope can be difficult, especially if it's steep. An average grade of greater than 8% may make a path challenging for people with disabilities.



- Cross Slope- is the average angle of the path that someone is traveling on that would cause them to lean to one side. While walking people may barely notice a it, but in a wheelchair a slight cross slope can make traveling very difficult and requires additional strength and effort to keep going straight. An average cross slope of greater than 8% may make a path challenging for people with disabilities



- Width- measures both the narrowest section of the path, and the clearance between the wheels that is needed for passing over smaller objects in the path. This will help a wheelchair user to know if their wheelchair is narrow enough for

the path, or if they will need to transfer from their wheelchair to get over rocky spots or to squeeze between the gap of two trees. The standard width for wheelchairs is 28".

- Surface- gives both a description of the types of ground that will be treaded on and a rating of: paved, hard, firm, soft, or very soft. Hard would be considered hard packed dirt, or bedrock. Firm would be short grass, and softer packed dirt. Soft would be soft dirt, or shallow gravel. Very soft would be mud, sand, tall grass, snow, shallow water, or any other type of ground that makes pushing a standard wheelchair impossible.
- Distance- is the final item that will be measured for the pathway of travel. By knowing the distance people have a better idea of the time it will take to get to their location.
- Other conditions that will be considered for the environmental assessment are: time of year, expected weather, expected temperature, elevation, and time of day that the activity will take place. These are all important because they will give sportspeople an idea of the preparations they need to make such as clothing they need to wear, or medications to bring.

## **2. Individual Assessment:**

An individual assessment is necessary to see what specific needs a sportsperson with disabilities will have for a hunting or fishing activity. This assessment is completed by the disability consultant and requires years of education and experience to perform. It takes about an hour to complete. Any information gathered in this assessment is personal

and will not be shared with anyone without the consent of the person who is being assessed. The individual assessments has two parts: interview, and skills analysis. The interview will gather the following information:

- Experience level of the sportsperson with disabilities. This information will help assistants and the disability consultant to know what skills the individual has developed already, and if they already have a preferred way of doing things.
- Personal goals for the hunting or fishing activity. Knowing goals helps to decide what parts of this activity is important to the individual and what they want to get from it.
- Attitude toward the experience. Does this person want to be pampered during the outing and have as much help as possible so they can relax, or do they want to work , so they can feel like they have overcome something challenging by themselves.

The skills analysis will examine the sportsperson's ability to perform a number of physical functions related to hunting or fishing, and will create a picture of what physical strengths and limitations this person has and how it will affect their ability to participate.

After all of the information is gathered and analyzed the disability consultant will compare the results of the individual assessment to the physical demands of the environmental assessment. By doing this, the disability consultant can begin to look at how this activity will be successful and where the sportsperson is going to need assistance. Based on the information gathered from the assessments, the disability consultant will also be able to recommend adaptive hunting, fishing, or mobility options

that may be useful to this person.

## **Mobility**

Perhaps the largest barrier that keeps people from hunting and fishing, is the lack of ability to move independently throughout the outdoor environment. Mobility impairment makes up 81% of all the disabilities among sportspeople. It is also by far, the most challenging area to provide assistance. There are three factors of mobility that must be looked at for a sportsperson with mobility impairment. These are: transferring, traveling, and body positioning.

### **1. Transfers:**

Transfers are the process of moving one's body from one surface to another. During the activities of hunting or fishing a person who is in a wheelchair, must make a transfer every time they move in or out of their wheelchair. Such transfers may include: truck to wheelchair, wheelchair to all terrain vehicle (ATV), wheelchair to boat, wheelchair to canoe, wheelchair to tree stand or wheelchair to any other platform in the outdoor environment. Making these types of transfers will be different every time, and require a lot of skill and training to perform them safely.

There are several techniques and tools that are used when helping someone to make a transfer. Using these techniques and tools are decided by the level of ability that the sportsperson has to move their own body. The level of help will range from simply standing by a person to make sure they don't fall while they transfer themselves, to having the assistance of two other helpers to physically lift the sportsperson out of their wheelchair and onto the targeted platform. Specific techniques are to be given during

training sessions, but general guidelines for making transfers are as follows:

Before the transfer-

- Check with the disability consultant in order to determine which transfers will be necessary and safe for the individual during the outing.
- Evaluate the situation and plan what you will do before you do it.
- Tell the individual your plan for making the transfer and make sure they know exactly what you are going to do.
- Move any debris or objects, such as fallen branches or rocks that may get in the way.
- Move the wheelchair as close to the other surface as possible to minimize the distance.
- Place a gait belt (used for making transfers) around the individual's waist.
- Put on the breaks, and remove the footrests and any other necessary equipment.
- Help the individual move as close to the edge of the seat as possible.

During the transfer-

- Use more than one person to assist in making a transfer.
- Do not pull the individual up by their arms or jerk them from their seat
- Do not make any transfer that you or the individual does not feel prepared to make.
- Avoid making transfers on loose gravel, or other possibly slippery surface.
- Always go on the count of three.
- Don't allow the individual to hold around your neck during the transfer, but do

have them assist if possible by pushing up with their arms.

- Make sure everyone has good footing. If the person is able to stand with assistance, prevent them from slipping by placing your foot firmly planted in front of theirs.
- When lifting, an individual keep their body close to yours and, hold onto their gait belt. Keep your back strait as possible and lift with your legs. Avoid twisting at the waist and shuffle your feet instead.
- If transferring someone to an unstable surface such as a boat, or canoe make sure it is stabilized by an assistant.
- When sitting a person into a canoe or vehicle, lead their bottom onto the seat first, and then move their feet inside afterwards.

## **2. Traveling:**

Traveling through the outdoor environment for sportspeople with disabilities is not an easy task. Not only is the ground an obstacle course, but the wind, weather, light, and temperature can all provide challenges that make can make traveling to a desired outdoor location difficult. The following suggestions should be considered while assisting a sportsperson with disabilities to travel to a desired location:

- Always plan your route of travel ahead of time. Know exactly where you are going and how your sportsperson with a disability will get there. Choose locations that will provide not only good access but excellent success for hunting or fishing.
- Use motorized vehicles to drive you and your companion as close to the desired

location as possible.

- While walking or using a wheelchair to travel, always go slow, and take rests frequently, there should be no rush.
- If pushing a manual wheelchair use other people to assist. Also where possible, have the sportsperson with a disability do some of the work.
- When assisting with someone who has cognitive or visual impairments, protect them from tripping hazards or low hanging branches.

### **3. Body Positioning:**

Body positioning is a critical part of hunting and fishing for sportsperson who has a disability. The way our bodies are positioned can effect the way we perceive the surroundings in our environment. It effects our breathing and endurance. It has an impact our level of comfort as well as the range of motion in our trunk, arms, and hands, which is necessary to effectively shoot a gun use a fishing pole.

Guidelines for body positioning:

- Make sure the individual is positioned or seated, on the most level surface possible, avoiding the need for the person to lean in any direction while at rest.
- Ask the person if they are comfortable and if their position feels natural.
- Look at the individual's posture. Do they have the ability to look in all directions. Do they have maximum use of their hands and arms. Are they slouched forward, tilted back or leaning towards one side. Do they have to twist their waist in order to hold their fishing pole out the side of the boat, or aim their gun.
- Assist individuals in obtaining optimal position for function, by sitting them strait



up in their seat, and facing them in the direction where the action is taking place.

- If obtaining the best position is difficult, because of sloping terrain or body deformity, use some firm foam padding to help individuals make adjustments.
- Be cautious not to let an individual sit in one position for an extended period of time. Make sure they move around or temporarily change the way they are seated every 10 minutes. Failure to do this could result in personal injury.

## **Adaptive Equipment**

Every person who uses adaptive hunting and fishing equipment, has unique likes, dislikes, and needs. Therefore it is difficult to make decisions on which equipment will be the best. Decisions on what equipment to use will be determined by a combination of the assessments, fitting, and preference of the individual with the disability. This section will give an overview of some of the adaptive equipment that may be available for use through Mountains to Marshes Accessibility Services. (Illustrations to some of this equipment is provided in the appendix on page 61).

### **1. Outdoor Mobility Equipment:**

- Trac About Inc.

Trac About Inc has built the *IRV 2000* which is a high power electric wheelchair built on tracks, much like a tank or tractor, instead of wheels (Trac About). The *IRV 2000* is capable of driving up and down hills, and through tall grass and sandy beaches. It is also equipped with water resistant components to give it an ability to drive through mud and snow. Cleaning this piece of equipment may be difficult. The dimensions of the *IRV 2000* allow it to navigate inside a home and fit through doorways. It has the

ability to turn on a dime making it extremely maneuverable.

This piece of equipment has the capability to assist people who have high mobility needs such as someone with quadriplegia or who has limited upper body strength.

- Rural Pursuit Vehicle

The *Rural Pursuit Vehicle (RPV)* is an all terrain vehicle that was designed by farmers (Rural Pursuit Vehicle). It consists of a platform that opens in the front and hydraulically lowers for a wheelchair to back up into it. When the wheelchair is locked into place on the platform, and the front loading ramp is closed, this vehicle has the ability to take it's driver practically anywhere in the outdoor environment. The *RPV* is controlled by a joystick which can be adjusted for ideal positioning and comfort. The joystick is positioned on a moveable arm which can be extended outward to give control to someone walking along side of the vehicle. The joystick is also interchangeable for people who may prefer a different type of control. The *RPV* is powered by a 13 horsepower Honda engine.

This Vehicle would be useful for people who are bound to a wheelchair such a person with quadriplegia and who would not benefit from transferring from their wheelchair at any time during a hunting or fishing experience.

- Natural Access

Natural Access is a company specialized in building all-terrain and beach wheelchairs. The *Landeez* is a beach wheelchair that is equipped with plastic pneumatic tires which are built to absorb bumps in the road and easily roll over sand, gravel and

snow (Natural Access Product Page). This wheelchair is easy to disassemble and put into a vehicle for travel purposes. The *Landeez* is not a powered wheelchair and requires someone to push it.

This piece of equipment would be ideal for a sportsperson with a mobility impairment who is going through tall grass or shallow mud, in order to hunt ducks or geese. It would also be useful for moving someone over a sandy beach to the water's edge for fishing. It is not meant for extended use, but rather as a transport for moving a person to a different location where the activity will take place. Using the *Landeez* for activities of hunting and fishing requires a higher functioning wheelchair user or a person who can walk but only short distances.

- Disability Options

The *Kili-Kart* is a manual wheelchair that may be considered as the backpackers wheelchair (Disability Options). It designed to go into the back country for several days with the assistance of two others. People who assist someone in this wheel chair will either push from the back using grab bars attached to the back, or pull from the front using a pull bar that is attached to the front swivel wheel. Two other smaller wheels can be lowered to the ground to add stability for the wheelchair user, when they are propelling themselves.

This wheelchair is for the use of higher functioning wheelchair users, and may not be ideal for use during the actual hunting or fishing activity. The *Kili-Kart* would be an excellent means of traveling longer distances through forests or high mountain country in order to get to a desired location that is not accessible any other way.

- Utility Vehicles

One type of useful mobility equipment the mainstream utility vehicle. These powerful, but lightweight vehicles are built by a number of manufacturers and are designed to go almost anywhere off road, including through rivers and over boulders and logs (UV Country). They come equipped with many accessories including canopies for protection from rain and wind, trailers which can pull equipment including wheelchairs, and cable winches which can be used to pull itself out of the mud. Depending on it's design, the utility vehicle can have up to 4 passengers. Open sides give most of the utility vehicles easy access for wheelchair transfers.

These vehicles are good for traveling long distances in a short amount of time, and would be useful for all types of mobility impairment. Seating in the utility vehicle is not designed for people who can't sit up on their own. Therefore some adjustments may be required to provide a comfortable and secure seatbelt with padded shoulder straps.

## **2. Adaptive Hunting Equipment:**

- SR 77 Enterprises

The SR 77 Shooting Rest, is a wheelchair rifle mount designed for someone who has quadriplegia (SR 77 Enterprises). It is a piece of mechanical equipment that holds a high powered rifle in position and can be aimed using a joystick or mouth piece. After aiming the rifle it can be fired by sipping on a vacuum tube. In many cases, it is believed that shooting a rifle this way is more accurate than if someone were to aim a rifle with their hands while standing.

- Pullin Archery Products Inc.

Pullin Archery Products Inc. has a product called the *Pullin Archery Bow Tensioning System* (Pullin Archery Products Inc.). This device was created due to the extreme strength needed to pull back and hold the bow string on some of today's powerful compound bows.

The *Pullin Archery Bow Tensioning System* is a device that attaches to almost any compound bow and is designed to hold the string in firing position. When in the firing position an arrow can be added to the bow and fired by flipping a safety lever and then pushing the firing switch. This is believed to be a safe and effective way to conserve energy while bow hunting. The *Pullin Archery Bow Tensioning System* is ideal for a sportsperson who can hold and aim a bow but needs assistance pulling back the string and keeping it in the firing position.

- Helluva Hunt

Helluva Hunt designed the *Sight Impaired Scope Mount* which is a modified rifle scope designed to allow an individual with a visual disability to aim a rifle with the assistance of a person who is not visually disabled (Abledata). The device consists of two telescopic scopes mounted on aluminum brackets, with one six inches above the other. The bottom scope is designed to be used by the person with the visual disability, and the top scope is used by the assistant. This way the assistant can look over the shoulder of the hunter with visual impairment and into the higher scope in order to give a directions and make sure the aim is correct.

This piece of assistive technology makes big game hunting possible for anyone

with a visual impairment, regardless of it's severity.

### **3. Adaptive Fishing Equipment:**

- John's Reels

*John's Reels* are motorized fishing reels that have six to ten pound pulling power and retrieves fishing line at 1 ½ to 3 ½ feet per second (Access To Recreation, John's Reels). The *John's Reels* can be controlled with one hand by using the thumb to activate the retrieving lever. *John's Reels* can also be adapted for use with a joystick or push button remote that can be placed close to a person's chin .

This fishing reel is useful for all clients who may have poor hand strength, quadriplegia, a stroke, or an amputation of one or two hands.

- Van's E-Z Cast

The *Van's E-Z Cast* is a device that attaches a fishing pole to the armrest of any type of chair including a wheelchair, and when activated springs forward automatically casting a fishing line up to forty feet into the water (Access To Recreation, Van's E-Z Cast).

This device is useful for anglers with many types of disabilities who would have difficulty making the quick swooping motion needed for casting a fishing line. It is useful for people who have severe pain in the arm or shoulder, for people with limited motion in their arms, or for people with no ability to use their arms.

- TY- All

The *Fisherman's Ty-All* is a unique piece of assistive technology for anglers who have limited hand use or lack of ability to use small objects (Access To Recreation, Ty-

All). This is a small tool that can be bolted to a stable surface, and assists people in threading hooks, tying knots, and cutting fishing line.

Anglers who may benefit from the *Fisherman's Ty-All* could be people who have the use of only one hand.

- Shelton Products

Shelton Products is a company that builds assistive devices exclusively for people with the use of only one hand. Their specialty is the *StrikeFighter* Which is a fishing pole holster that straps to the waist and thigh. When placed in the *StrikeFighter* , a fishing pole can be controlled by movement in the hips and thigh of the person fishing, allowing the free hand to reel in the fishing line (Shelton Products).

This device is useful for anyone who has had an amputation, or any other disabilities affecting the coordination or ability to freely move more than one arm.

- War Eagle Boats

War Eagle Boats is a boat making company who has made an *All Aboard, the Roll On Ramp* adaptation which may be installed to any of their boats (War Eagle Boats). This feature gives the boat an ability to fold down it's side while still floating and extend a ramp to a dock or shore line, making the War Eagle Boats entirely wheelchair accessible.

This feature is unique and ideal for an angler with mobility impairment who is bound to a wheelchair, or who has problems stepping down into a boat.

- One Person Fishing Pontoons

Fishing pontoons are a relatively new concept and are popular among the general

fishing population. This mainstream product is manufactured by several different companies and is designed to give an angler the opportunity to fish away from the shore line without the hassle of launching a heavy boat (Fishing-N-Float Tubes). Fishing pontoons are designed of two inflatable pontoons connected by a single chair and footrests. They are propelled by two oars and are extremely mobile giving a person an ability to go almost anywhere on the water. Fishing pontoons are lightweight and very safe.

This product could be very useful and fun for an angler with mobility impairment who has good use of their upper body. Seats could be adjusted or interchanged for someone depending on their ability to remain upright in a seat without assistance. This piece of equipment is beneficial to it's users because it makes them look less different than anyone else.



## **Chapter 5: Summary and Conclusions**

Through review of literature, it has been identified that there are many physical and psychological benefits that come through active participation of outdoor activities by people with disabilities. One type of outdoor activity believed to have these benefits are the activities of hunting and fishing. Through non-profit organizations, and State programs, many people with disabilities are able to overcome physical barriers to the activities of hunting and fishing, but there are still areas of the United States where these services are not available.

It has been shown that Occupational therapists have skills that may be proven useful to sportspeople with disabilities who are seeking individual assistance in pursuing these activities. Essential skills that occupational therapist may offer include: improving the competency in the mobility of clients withing any given environment including the outdoors (Trombly & Radomski, 2002 p 666), and "expertise in assessing clients for assistive technology and outlining recommendations of devices/modifications that meet the needs of the client within their environment" (Canadian Association of Occupational Therapists, 2003, p 114).

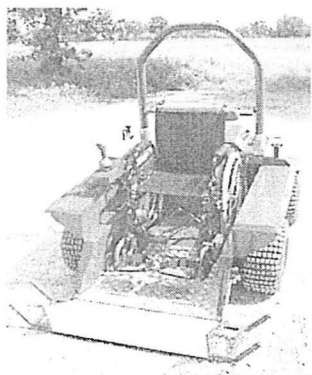
By developing the protocol for this scholarly project, it is hoped that occupational therapists have the ability and could expand opportunities for people with disabilities to participate in the beneficial activities of hunting and fishing. This program is unique in that it is designed to extend services to people who live in areas where adequate programs are not available.

Limitations to this scholarly project is the lack of research that has been done to

prove the actual physical and psychological benefits of hunting and fishing activities. Without this research it is hard to gain support for this cause. There is also some controversy around these activities, where some people feel that these activities are inhumane and harmful to the environment. This may create limitations to the support that this program can receive. One final limitation is the possibility that these services may be too advanced or in-depth for the actual need of sportspeople with disabilities, and therefore they may not be well accepted.

To improve the validity of this scholarly project, it is recommended that future research be conducted to determine the benefits that are received by individuals with disabilities who participate in hunting and fishing activities. Providing services as a testing period for people with disabilities would be necessary to identify any areas that need improvement, determine its effectiveness, and to make sure that this population is provided services that are appropriate and useful.

## Appendix:



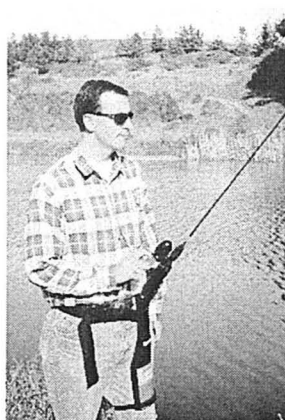
Rural Pursuit Vehicle



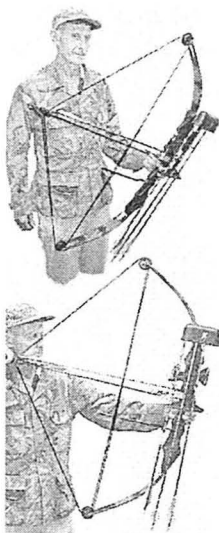
IRV 2000



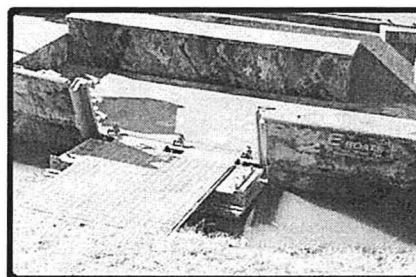
SR 77 Enterprises Shooting Rest



StrikeFighter



Pullin Archery Bow Tensioning System



All Aboard, Roll On Ramp

## **References:**

Abledata. (n.d). *Search by product, Recreation, Sports, Archery and Shooting, Modified rifle scope, Sight Impaired Scope Mount*. Retrieved November 12, 2003, from <http://www.abledata.com/>

Access to Recreation. (n.d). *John's Reels, Ty-All, & Van's E-Z Cast*. Retrieved November 12, 2003, from <http://store.accesstr.com/page.cfm/PageID/67>

Alabama Division of Wildlife and Freshwater Fisheries. (November 1994). *Enabling Disabled Hunters*. Retrieved October 16, 2003, from <http://www.dcnr.state.al.us/agfd/hdcp.html>

Alabama Division of Wildlife and Freshwater Fisheries. (n.d.). *Alabama's hunting & fishing trail for people with physical disabilities*. Retrieved October 16, 2003, from <http://www.dcnr.state.al.us/agfd/trail.html>

Alaska Hunting Adventures with Deltana Outfitters. (n.d.). *Physically impaired hunters*. Retrieved September 22, 2003, from [http://www.deltana.com/hunting/handicap\\_hunting.htm](http://www.deltana.com/hunting/handicap_hunting.htm)

Beneficial Designs. (n.d.). *The Universal Trail Assessment Process*. Retrieved November 3, 2003, from <http://www.beneficialdesigns.com/trails/utap.html>

Buckmasters American Deer Foundation. (n.d.). *Disabled hunters*. Retrieved September 22, 2003, from <http://www.badf.org/DisabledHunters.html>

Brunicki, Donnell, Evans, Lucas, Manzione, Mitchell, Petersen. (July 2003). *Activities designed for all*. Retrieved October 14, 2003, from Utah Division of Wildlife Resources web site: <http://www.wildlife.utah.gov/publications/>

- Canadian Association of Occupational Therapists. (April 2003). Assistive technology and occupational therapy. *Canadian Journal of Occupational Therapy*; (70), 113-114.
- Cook & Hussy. (2002). *Assistive Technologies Principles and Practice (2 ed.)*. Missouri: Mosby.
- Disability Options. (n.d). *Disability Options, Kili-Kart*. Retrieved October 1, 2003, from <http://www.mtaonline.net/~kslack/>
- East Cape Plains Game Safaris. (n.d.). *Africa: East Cape Plains Game Safaris: Disabled Hunting & Hunts for the handicapped*. Retrieved September 16, 2003, from [http://badf.org/disabled\\_Hunters/GuidesOutfitters.html](http://badf.org/disabled_Hunters/GuidesOutfitters.html)
- Fishing -N- Float Tubes (n.d) *Pontoons*. Retrieved November 12, 2003, from <http://www.fishing-n-floattubes.com/columbia.html>
- Idaho Disability Statutes. (n.d). *Recreation: Title 36 Fish & Game: Chapter 11 36-1101: Hunters with disabilities*. Retrieved October 16, 2003 from <http://www2.state.id.us/silc/IdDisabilityStatutes.htm>
- Idaho Fish and Game. (2002) *Fishing: Regulations: 2002 & 2003 General fishing season and rules- including Steelhead*. Retrieved October 3, 2003, from <http://www2.state.id.us/fishgame/fishgame.html>
- Illinois Department of Natural Resources. (1999). *Disabled outdoor opportunities*. Retrieved October 16, 2003, from <http://www.dnrstate.il.us/doo/>
- Leifer, Dina. (January 2002). Sporting Chance. *Inursing Standard*; (16), 13-15. Retrieved October 12, 2003 from Pubmed database.

- Lysaght, Rosemary. (August 1996). Job analysis in occupational therapy: Stepping into the complex world of business and industry. *The American Journal of Occupational Therapy*; (51-7), 569-574.
- National Wildlife Federation. (n.d.). *Wildlife is impacted*. Retrieved October 3, 2003, from [http://www.nwf.org/naturefunding/wildlife\\_needs\\_our\\_help.html](http://www.nwf.org/naturefunding/wildlife_needs_our_help.html)
- Natural Access. (n.d.). *Natural access, all-terrain and beach wheelchairs*. Retrieved October 1, 2003, from <http://www.natural-access.com/>
- Pullin Archery Products Inc. (n.d.). *Pullin Archery Products, Inc. Bow Tensioning and Release Accessories*. Retrieved November 12, 2003, from <http://www.pullinarchery.com/>
- Rural Pursuit Vehicle. (n.d.). *Rural Pursuit Vehicle*. Retrieved October 1, 2003, from <http://www.rpv.org.uk.rpv.htm>
- Shawn Labrums Wild Mountain Outfitters. (n.d.). *Trophy big game hunting*. Retrieved September 22, 2003, from [http://www.provelocity.com/\\_pvhosting/monsterbulls\\_com/](http://www.provelocity.com/_pvhosting/monsterbulls_com/)
- Shelton Products. (n.d.). *StrikeFighter*. Retrieved October 1, 2003, from [http://members.aol.com/nevertie/phy\\_challenged\\_one\\_arm.html](http://members.aol.com/nevertie/phy_challenged_one_arm.html)
- Sierra Club.(n.d.). *Wildlands hunting and fishing: A conservation timeline*. Retrieved October 3, 2003, from [http://www.sierraclub.org/wildlands/hunting\\_fishing/timeline.asp](http://www.sierraclub.org/wildlands/hunting_fishing/timeline.asp)
- SR-77 Enterprises. (n.d.). *SR-77 Enterprises Shooting Rest*. Retrieved November 11, 2003 from <http://www.sr77.com/>

Taylor, & McGruder. (May 1995). The meaning of sea kayaking for persons with spinal cord injuries. *The American Journal of Occupational Therapy*; (50-1), 39-45.

Trac About. (n.d). *Where do you want to go today?* Retrieved October 1, 2003, from [http://www.tracabout.com/photo\\_album.htm](http://www.tracabout.com/photo_album.htm)

Trombly,& Radomski. (2002) *Occupational therapy for physical dysfunction (5<sup>th</sup> ed.)*. Baltimore: Lippincott Williams & Wilkins.

U.S. Department of Justice. (May 2002). *A guide to disability rights laws*. Retrieved October 3, 2003, from <http://www.usdoj.gov/crt/ada/cguide.htm>

U.S. Fish & Wildlife Service. (2002). *2001 National survey of fishing, hunting, and wildlife associated recreation*. Retrieved September 23, 2003, from <http://www.census.gov/prod/2002pubs/FHW01.pdf>

UV Country. (September 6, 2003). *Kawasaki MULE*. Retrieved October 1, 2003, from [http://www.deeredoctor.com/main\\_mulelink.htm](http://www.deeredoctor.com/main_mulelink.htm)

War Eagle Boats. (n.d). *Accessories & Features, All Board, the Roll On Ramp*. Retrieved October 1, 2003, from <http://www.wareagleboats.com/>